

REMARKS

Claims 1-35 are pending. All claims 1-35 are believed to be allowable over the references cited by the Examiner as discussed below. Accordingly, a Notice of Allowance for the present application is respectfully requested.

Rejection Under 35 U.S.C. §102(e)

Claims 1, 2, 4-6, 9-11, 13, 15-17, 20-22, 24, and 26-32 stand rejected under 35 U.S.C. 102(e) as being anticipated by Weigand.

Independent claim 1 recites voice activity detect (VAD) method that generally includes determining an average noise energy level of the communications signals based on noise energy amplitude during periods of no voice activity, converting the average noise energy level to sidetone attenuation that increases with increased noise energy level, generating a VAD threshold based at least in part on the sidetone attenuation, and performing VAD based on the generated VAD threshold.

Weigand discloses a telephone receiver circuit with sidetone signal generation controlled by voice activity detection by using a voice activity detector (VAD) to detect the presence of voice activity and dynamically adjust the sidetone signal generation to compensate for noisy environments by eliminating or reducing the sidetone signal in the absence of voice activity.

The Examiner contends that Weigand discloses each element of claim 1 (citing col. 1, line 32-col. 2, line 31 which references the prior art shown in FIG. 1 and col. 4, lines 27-35).

However, Weigand does not disclose or suggest determining an average noise energy level *during periods of no voice activity*. Although Weigand disclose certain signal processing performed when there is an absence of voice activity, such signal processing is performed by the voice activity detector 22 which in turn controls the transmitter 20.

Specifically, Weigand states “In the absence of voice activity within the audio signal 35, the VAD control signal 23 causes the transmitter circuitry 20 to be disabled inasmuch as at least the power amplifier for the output signal 21 is disabled or turned off. This allows electrical power to be conserved, which is particularly important with the system 10 is being powered by a portable battery.” (Col. 2, lines 7-13).

Furthermore, as clearly shown in FIG. 1, the sidetone generator 24 and the voice activity detector 23 operate *independently* of each other. In addition, a second microphone 38 is provided

to pack up background noise 17 that is then fed directly as input into the sidetone generator 24 (col. 2, lines 22-28; see also FIG. 1).

Thus the sidetone generator 24 does not use an average noise level that is determined during periods of no voice activity (as generally recited in claim 1) to determine the sidetone attenuation.

In addition, Weigand also fails to disclose or suggest generating a VAD threshold based at least in part on the sidetone attenuation. As noted above, FIG. 1 clearly shows that the sidetone generator 24 and the voice activity detector 23 operate *independently* of each other. As such, any VAD threshold does not depend on the sidetone attenuation.

Independent claim 13 recites a VAD system generally including an adaptive VAD threshold generator configured to generate a VAD threshold based at least in part on a sidetone attenuation, the sidetone attenuation being based on an average ambient noise energy level determined from a noise energy amplitude during periods of no voice activity, the sidetone attenuation increasing with increased noise energy level and a comparator configured to compare received signals to the adaptive VAD threshold to determine existence of voice activity.

Independent claim 24 recites a communications system that generally includes a microphone for receiving communications signals, a voice activity detector, and an adaptive sidetone control in communication with the microphone and the voice activity detector, the sidetone control to adaptively control a sidetone level based on an average ambient noise energy level determined from a noise energy amplitude during periods of no voice activity as determined by the voice activity detector, the adaptive sidetone control being configured to adaptively increase attenuation of the sidetone level with increased ambient noise level.

As is evident, the elements of independent claim 13 and 24 are similar to those discussed above with reference to claim 1, the same or similar arguments apply to claim 13 and 24 and are not repeated for purposes of conciseness and clarity only.

Withdrawal of the rejection of independent claims 1, 13, and 24 as well as claims dependent variously therefrom, under 35 U.S.C. §102(e) is respectfully requested.

Rejections Under 35 U.S.C. §103(a)

Claims 3, 7, 8, 12, 14, 18, 19, 23, 25, and 33-35 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Weigand in view of Hollier.

However, because claims 3, 7, 8, 12, 14, 18, 19, 23, 25, and 33-35 are dependent variously from independent claims 1, 13, and 24 claims 3, 7, 8, 12, 14, 18, 19, 23, 25, and 33-35 are also believed to be allowable for at least similar reasons as those discussed above.

Withdrawal of the rejection of claims 3, 7, 8, 12, 14, 18, 19, 23, 25, and 33-35 under 35 U.S.C. §103(a) is respectfully requested.

CONCLUSION

Applicants believe that all pending claims are allowable and respectfully request a Notice of Allowance for this application from the Examiner. Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number set out below.

In the unlikely event that the transmittal letter accompanying this document is separated from this document and the Patent Office determines that an Extension of Time under 37 CFR 1.136 and/or any other relief is required, Applicant hereby petitions for any required relief including Extensions of Time and/or any other relief and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 50-2315 (Order No. 01-7095).

Respectfully submitted,



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